

REV.
E

REPORT B80710

**SUBSTANTIATION
ADJUSTABLE ENGINE MOUNT
BELL 204B & 205A-1**

[Including UH-1H, per Appendix C]


[Including BELL 205B, per Appendix D]

Prepared by

Scott Wales

Approved by

Lane V. Helms, P.Eng.

LOG OF REVISIONS & APPROVALS		PREPARED		 AERO CONSULTING SERVICES LTD.		REPORT NO.	
		Scott Wales				B80710	
		DATE				PAGE NO.	
		02 FEB 98				a	
REV LTR	DESCRIPTION	PAGES AFFECTED	DATE	ACS APPROVED	DAR APPROVED	T.C. APPROVED	
N/C	INITIAL RELEASE	ALL	11 JAN 99		N/A	N/A	
A	UH-1H APPLICABILITY REFERENCE DATA AMENDED TO: BELL DWGS	C.01	01 SEP 99		N/A	N/A	
B	REVISED CERTIFICATION BASIS	C.01, 1.01	01 MAY 01	<i>[Signature]</i>	N/A	N/A	
C	PARAGRAPHS C-2 & C-3 ADDED	C.02, C.03	JUN 05 2001	<i>[Signature]</i>	N/A	N/A	
D	APPENDIX D (BELL 2058) ADDED	D.01 THROUGH D.05	NOV 14 2001	<i>[Signature]</i>	N/A	N/A	
E	REVISED APPENDIX C - ADDED UH-1H UNDER TCDS R00007DE	C.02, C.03, C.04	20 FEB 04	<i>[Signature]</i>	N/A	N/A	

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1.01

1.0 INTRODUCTION

1.1 PURPOSE

This report substantiates that modifications defined by ACS MDS B80700 comply with the applicable requirements of FAR 29.

1.2 SCOPE

This report documents the applicable loads specified by FAR 29, subpart C and design compliance with the static strength requirements of subpart D. Compliance with the flight requirements of subpart B is not affected by this installation. Similarly, compliance with subparts E, F, and G is not affected.

1.3 AIRWORTHINESS STANDARD

The Bell 204B and 205A-1 are certified under CAR 7 effective 01 AUG 56 as amended 7-1 through 7-4 (Ref. FAA Type Certificate Data Sheet H1SW). This report demonstrates that the modification complies with FAR 29, dated 01 January 1984, which is an updated equivalent of CAR 7.

1.4 GENERAL DESCRIPTION

The Bell 204B and 205A-1 require the engine to be aligned using shims under the pads of the engine mount. This modification provides a method of alignment that does not require the shims. The modification allows each tube assembly to be adjusted using a turn buckle type fitting (Ref. ACS DWG B80701).

REVISED 01 MAY 01

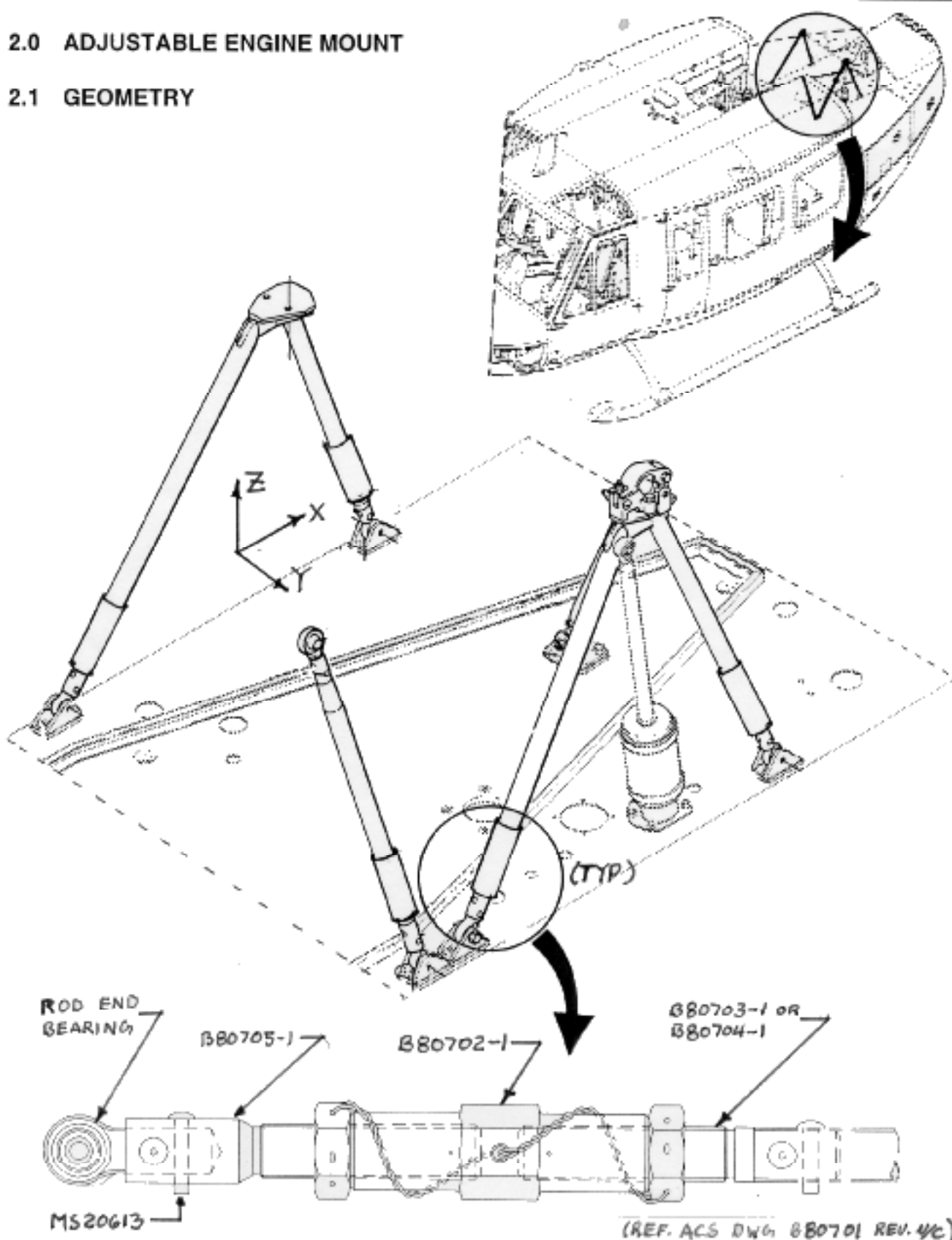
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2.0 ADJUSTABLE ENGINE MOUNT

2.1 GEOMETRY



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2.2 APPLIED LOAD

The exact loads applied to the engine mount are not known. Conservatively assume that ultimate load on the engine mount is equal to the ultimate strength of the weakest component.

a) Components

NAS624 bolt
MS20613-5C Rivnut
Tube Assembly (4130 steel)

b) Allowables

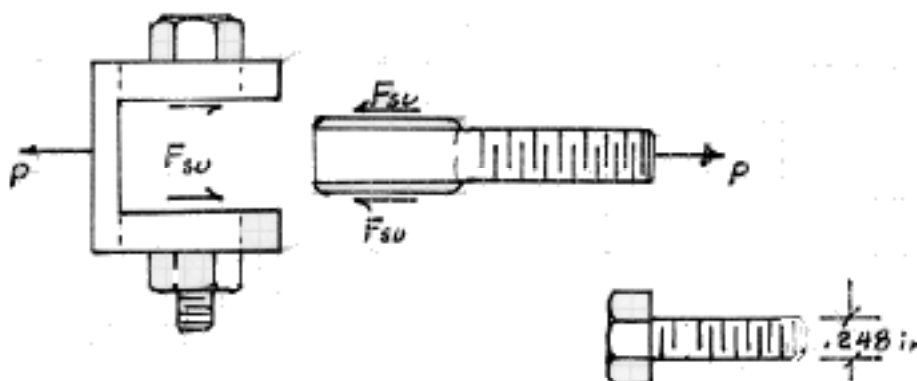
1. NAS624 bolt
 $F_{su} = 160,000 \text{ psi}$ (Based on 80% of F_{tu})
2. MS20613-5C Rivnut
 $F_{su} = 85,000 \text{ psi}$
3. Tube Assembly (4130 steel)
 $F_{tu} = 95,000 \text{ psi}$ (Ref. MIL-HDBK-5F pg. 2-15)

c) Ultimate Load

1. NAS624 bolt

$$A = \pi \frac{(Dia)^2}{4} \text{ (Shear Areas)} = \pi \frac{(248 \text{ in})^2}{4} (2) = 10 \text{ in}^2$$

$$P = (F_{su})(A) = (160,000 \text{ psi})(10 \text{ in}^2) = 16,000 \text{ lb}$$



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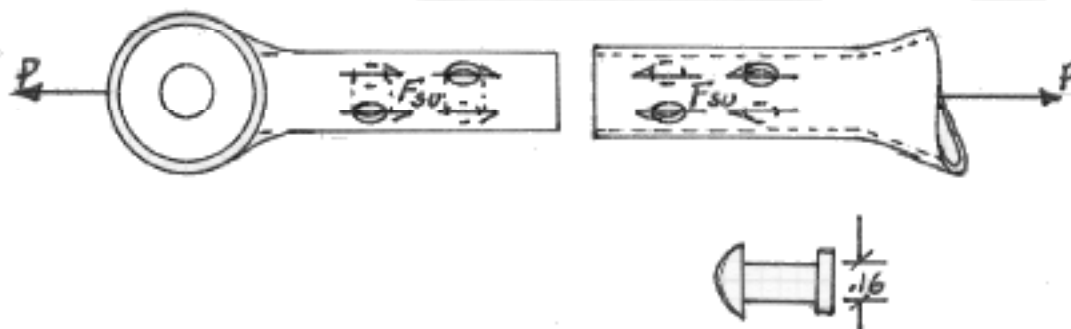
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2.2 APPLIED LOAD (cont'd)

- c) Ultimate Load
2. MS20613-5C Rivnut

$$A = \pi \frac{(Dia)^2}{4} \text{ (Shear Areas)} = \pi \frac{(16 \text{ in})^2}{4} (4) = .08 \text{ in}^2$$

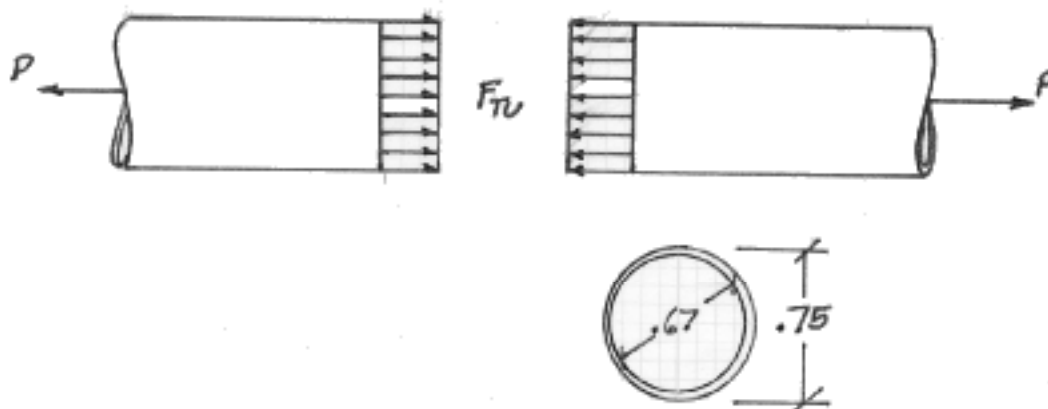
$$P = (F_{su})(A) = (85,000 \text{ psi})(.08 \text{ in}^2) = 6,800 \text{ lb}$$



3. Tube Assembly (4130 steel)

$$A = \pi \left(\frac{O.D.^2 - I.D.^2}{4} \right) = \pi \left(\frac{(1.75 \text{ in})^2 - (.67 \text{ in})^2}{4} \right) = .09 \text{ in}^2$$

$$P = (F_{tu})(A) = (95,000 \text{ psi})(.09 \text{ in}^2) = 8,550 \text{ lb}$$



4. Critical load
P = 6,800 lb

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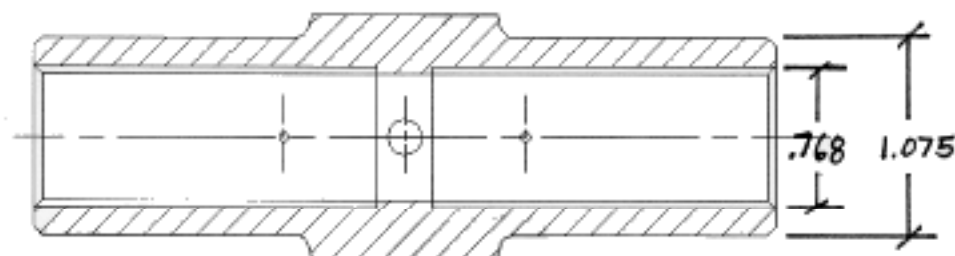
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2.3 B80702-1 SLEEVE

a) Geometry

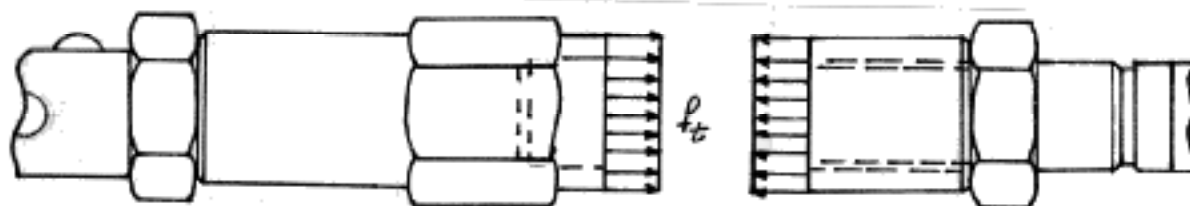


b) Applied Load

$$P = 6,800 \text{ lb}$$

(Ref. Section 2.2(c)(4))

c) Applied Stress



$$f_t = \frac{P}{A} = \frac{6,800 \text{ lb}}{.44 \text{ in}^2} = 15,455 \text{ psi}$$

d) Material

4130 Steel

e) Allowable

$$F_{tu} = 95,000 \text{ psi}$$

(Ref. MIL-HDBK-5F pg. 2-15)

f) Margin of Safety

$$MS = \frac{F_{tu}}{f_t} - 1 = \frac{95,000 \text{ psi}}{(15,455 \text{ psi})(2.3 \Delta)} - 1 = 1.67$$

Δ Stress concentration factor per Appendix A

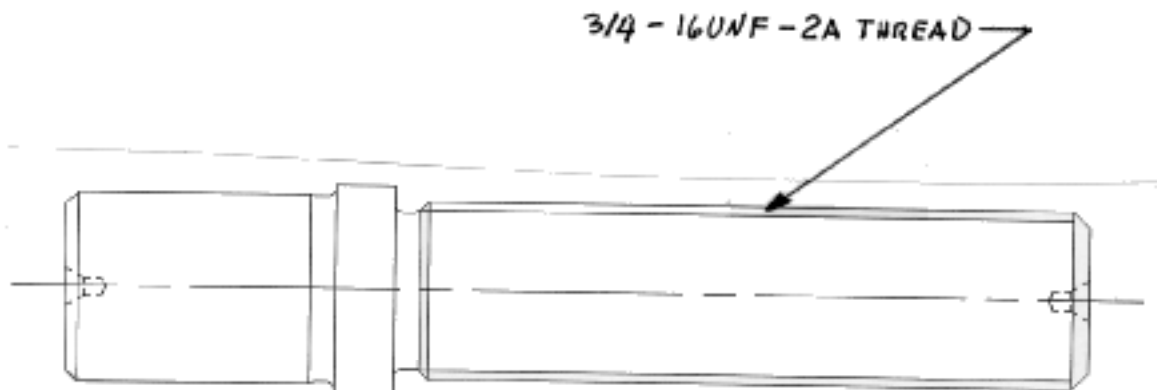
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2.4 B80703-1 AND B80704-1 STUDS (THREADS)

a) Geometry

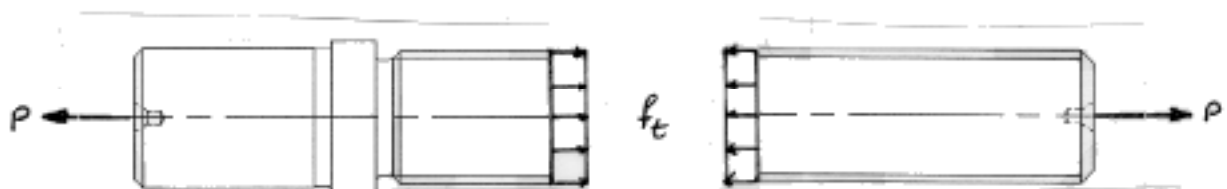


b) Applied Load

$$P = 6,800 \text{ lb}$$

(Ref. Section 2.2(c)(4))

c) Applied Stress



$$A = .373 \text{ in}^2$$

(REF. APPENDIX A)

$$f_t = \frac{P}{A} = \frac{6,800 \text{ lb}}{.373 \text{ in}^2} = 18,250 \text{ psi}$$

d) Material

4130 Steel

e) Allowable

$$F_{tu} = 95,000 \text{ psi}$$

(Ref. MIL-HDBK-5F pg. 2-15)

f) Margin of Safety

$$MS = \frac{F_{tu}}{f_t} - 1 = \frac{95,000 \text{ psi}}{(18,250 \text{ psi})(2.3 \Delta)} - 1 = 1.26$$

Δ Stress concentration factor per Appendix A

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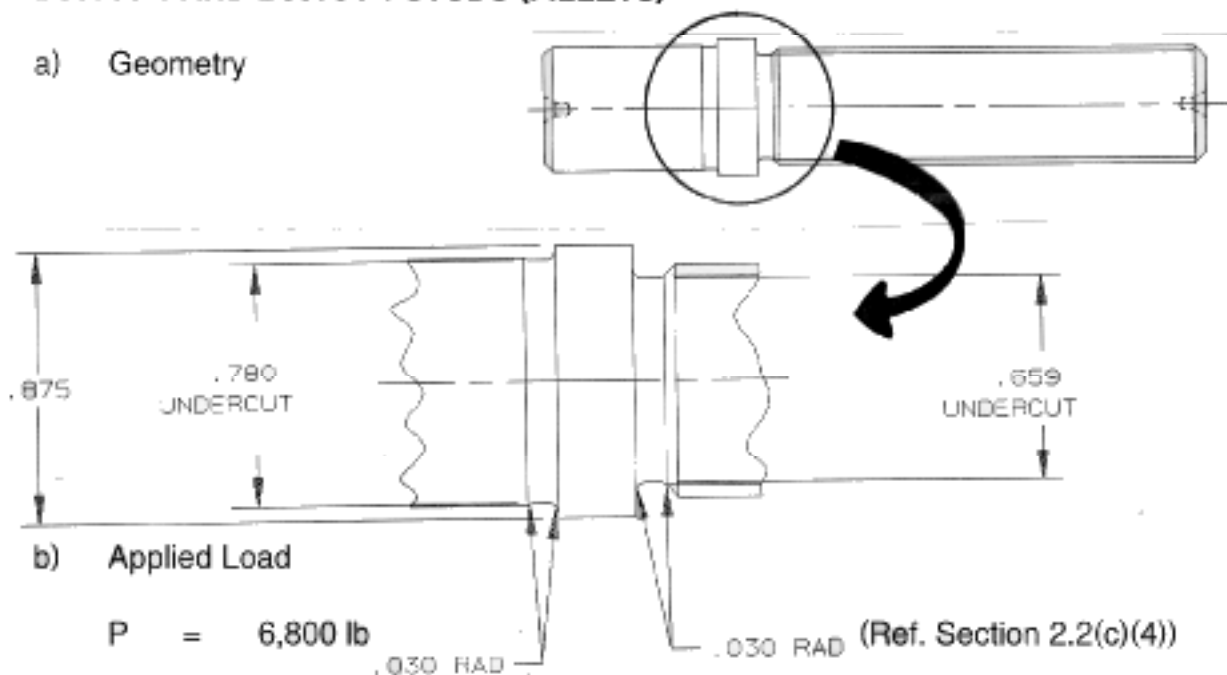
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2.5 B80703-1 AND B80704-1 STUDS (FILLET)

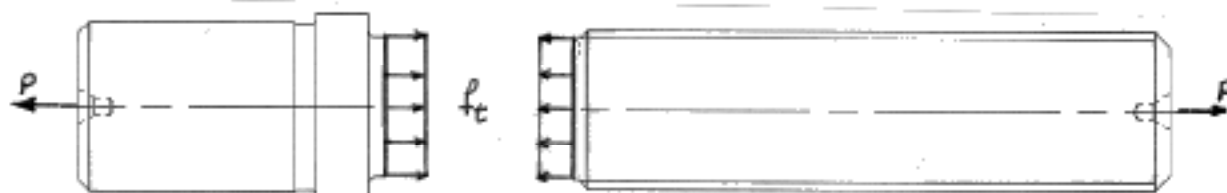
a) Geometry



b) Applied Load

$$P = 6,800 \text{ lb}$$

c) Applied Stress



$$A = \frac{\pi (Dia)^2}{4} = \frac{\pi (.659 \text{ in})^2}{4} = .341 \text{ in}^2$$

$$f_t = \frac{P}{A} = \frac{6,800 \text{ lb}}{.341 \text{ in}^2} = 19,950 \text{ psi}$$

d) Material

4130 Steel

e) Allowable

$$F_{tu} = 95,000 \text{ psi}$$

(Ref. MIL-HDBK-5F pg. 2-15)

f) Margin of Safety

$$MS = \frac{F_{tu}}{f_t} - 1 = \frac{95,000 \text{ psi}}{(19,950 \text{ psi})(2.8 \Delta)} - 1 = 0.70$$

 Δ Stress concentration factor per Appendix A

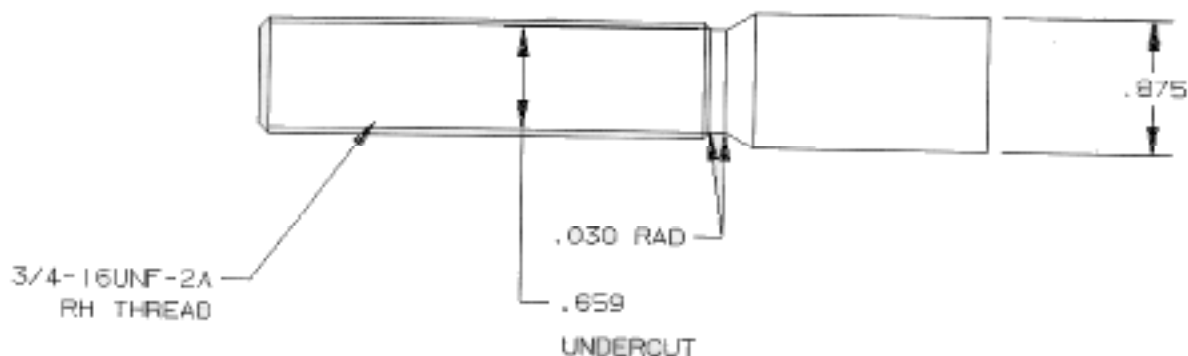
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2.6 B80705-1 STUD

a) Geometry




b) Substantiation

The threads and fillets on the B80705-1 stud are the same as those on the B80703-1 and B80704-1 studs. The B80705-1 stud is made of the same 4130 steel as the B80703-1 and B80704-1 studs. The same load is applied to all of the studs. Therefore, the B80705-1 stud is adequate in comparison to the B80703-1 and B80704-1 studs.

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2.7 ROD END BEARINGS

The rod end bearings are the same as the original installation. This modification does not change the geometry of the engine mount. The loads on the rod end bearings have not changed. The attachment of the rod end bearings to the modified engine mount uses the same fasteners as the original installation. The area of the B80705-1 stud is the same or greater than the area of the tube assembly in the original installation. Therefore, the attachment of the rod ends to the modified engine mount is adequate in comparison to the original installation.

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APPENDIX A

Machine Design, Theory and Practice

Machine Design

Aaron D. Deutschman
Walter J. Michels
Charles E. Wilson

Newark College of Engineering
New Jersey Institute of Technology

Theory and Practice

Macmillan Publishing Co., Inc.

NEW YORK

Collier Macmillan Publishers

LONDON

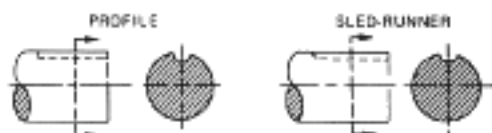
A.01

UNIFIED AND AMERICAN THREAD DESIGN



K_t		BENDING OR TENSION	
		ROLLED	CUT
	ANNEALED	2.2	2.3
	QUENCHED & DRAWN	3.0	3.8

KEYWAYS



K_t		PROFILE		SLED-RUNNER	
		BENDING	TORSION	BENDING	TORSION
	ANNEALED	1.6	1.3	1.3	1.3
	QUENCHED & DRAWN	2.0	1.5	1.6	1.6

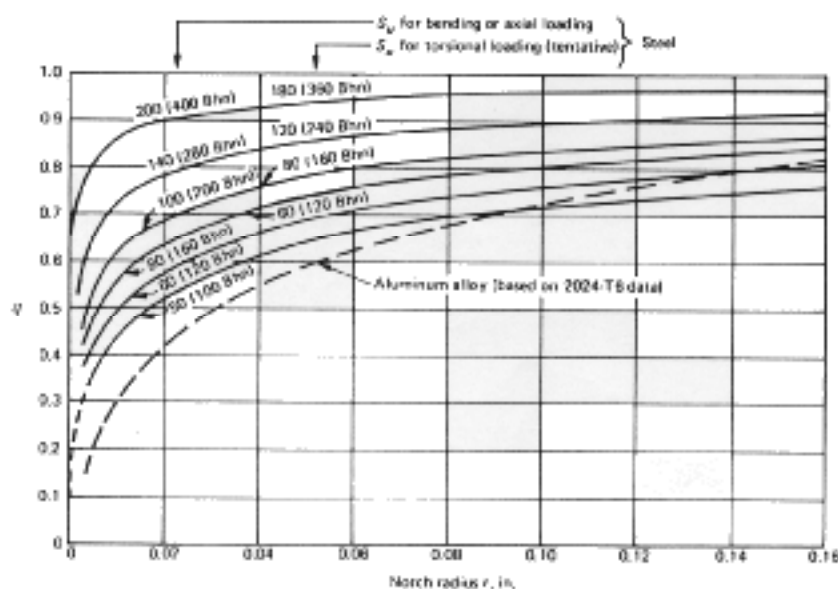
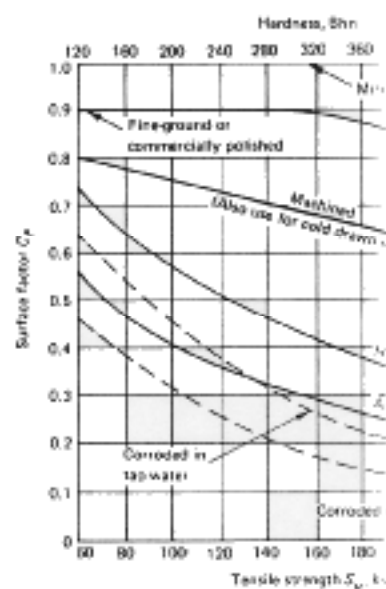


Figure B-1 Opposite, top and middle: Keyways. Note that these values are from Robert C. Juvinall, *Handbook of Stress*.

Figure B-2 Opposite, bottom: Notches. (Figures B-2 to B-10 inclusive are from *Considerations of Stress, Strain and Design Factors* by R. E. Peterson, 3rd edition, material found on p. 298 of *Metal Design*, McGraw-Hill Book Co., 1959. The same reference as that cited for Figure B-1.)

Figure B-3 Below: Reduction of stress concentration.



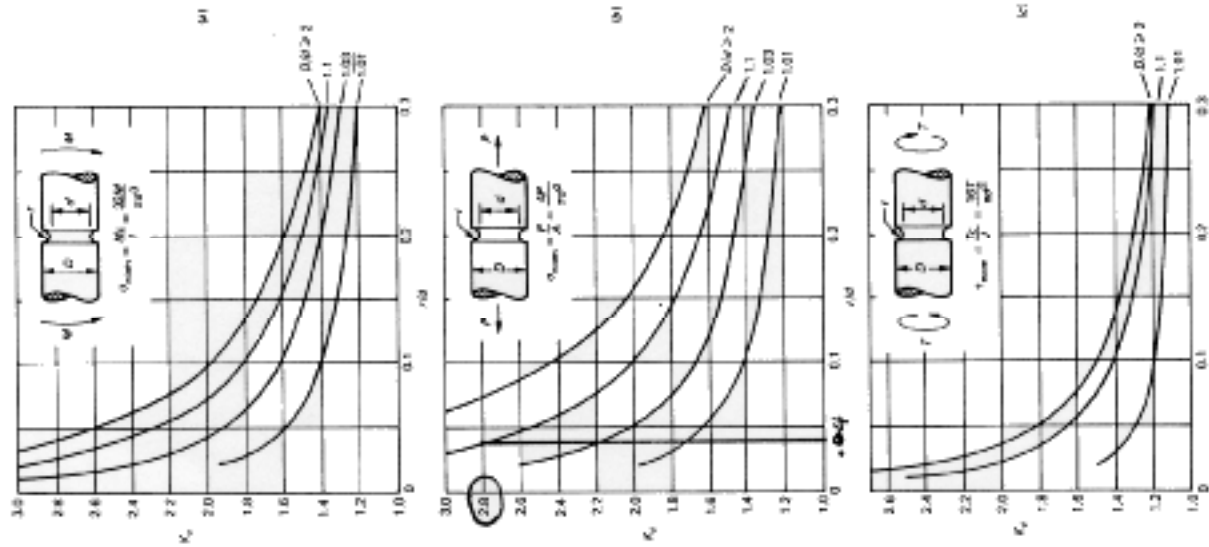
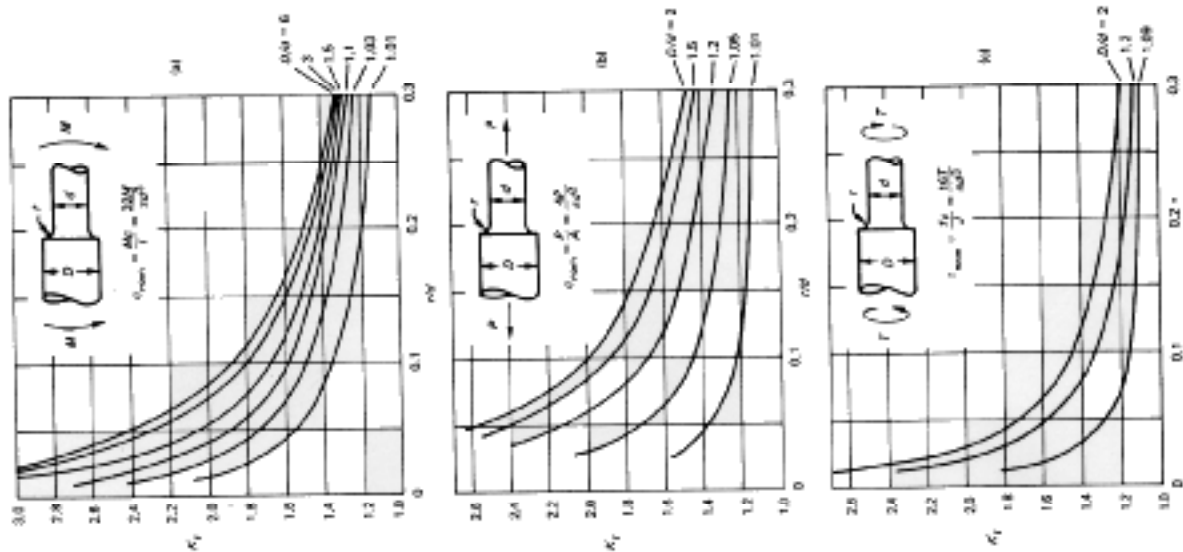


Figure B-4 Shaft with fillet (a) bending; (b) axial load; (c) torsion.



Obviously this problem can be alleviated by holding the pitch constant, as the diameter is increased. Some of the standard constant pitch threads available are 8 pitch (8 UN), 12 pitch (12 UN), 16 pitch (16 UN), and 20 pitch (20 UN). Some of the applications for which constant pitch threads are useful are high pressure pipe flanges, cylinder-head studs, heavy machinery, and so on.

In designating threads, the letter A is used for external threads, and B is used for internal threads. Threads are further classified according to fit. Class 1 fits have the widest tolerances and thus are the loosest fits, they are used when rapid assembly and disassembly is required. Class 2 fits are the most widely used and are recommended for most applications, except when contraindicated for some specific reason. Class 3, the final standard fit, is the one having the tightest fit and is used for precision applications. A variation of these fits can be obtained by using a different class of fit for the external and internal threads.

Table 16-1 Tables of Basic Dimensions, Standard Series Threads

(b) FINE THREAD SERIES, UNF AND NF—BASIC DIMENSIONS

Size	Basic Major Diameter, D , in.	Threads per inch, n	Basic Pitch Diameter, E , in.	Minor Diameter External Threads, K_e , in.	Minor Diameter Internal Threads, K_i , in.	Lead Angle at Basic Pitch Diameter, λ		Section at Minor Diameter at $D - 0.866/n$, in. ²	Tensile Stress Area, in. ²
						deg	min		
0(0.000)	0.0000	80	0.0519	0.0447	0.0465	4	23	0.00151	0.00180
1(0.073)	0.0730	72	0.0640	0.0560	0.0580	3	57	0.00217	0.00238
2(0.086)	0.0860	64	0.0759	0.0668	0.0691	3	45	0.00339	0.00394
3(0.099)	0.0990	56	0.0874	0.0771	0.0797	3	43	0.00451	0.00523
4(0.112)	0.1120	48	0.0985	0.0866	0.0894	3	51	0.00564	0.00661
5(0.125)	0.1250	44	0.1102	0.0971	0.1004	3	45	0.00716	0.00830
6(0.138)	0.1380	40	0.1218	0.1073	0.1109	3	44	0.00874	0.01015
8(0.164)	0.1640	36	0.1460	0.1299	0.1339	3	38	0.01285	0.01474
10(0.190)	0.1900	32	0.1697	0.1517	0.1562	3	31	0.0175	0.0200
12(0.216)	0.2160	28	0.1928	0.1722	0.1733	3	22	0.0226	0.0258
1/4	0.2500	28	0.2268	0.2062	0.2113	2	51	0.0376	0.0464
5/16	0.3125	24	0.2854	0.2614	0.2674	2	40	0.0534	0.0680
3/8	0.3750	24	0.3479	0.3239	0.3299	2	11	0.0809	0.0978
7/16	0.4375	20	0.4050	0.3762	0.3834	2	15	0.1090	0.1187
1/2	0.5000	20	0.4675	0.4387	0.4459	1	57	0.1486	0.1599
9/16	0.5625	18	0.5264	0.4943	0.5024	1	55	0.189	0.203
5/8	0.6250	18	0.5889	0.5568	0.5649	1	43	0.240	0.256
3/4	0.7500	16	0.7094	0.6733	0.6823	1	36	0.351	0.373
7/8	0.8750	14	0.8286	0.7874	0.7977	1	34	0.480	0.509
1	1.0000	12	0.9459	0.8978	0.9098	1	36	0.625	0.663
1-1/8	1.1250	12	1.0709	1.0228	1.0348	1	25	0.812	0.856
1-1/4	1.2500	12	1.1959	1.1478	1.1598	1	16	1.004	1.071
1-3/8	1.3750	12	1.3209	1.2728	1.2848	1	9	1.260	1.313
1-1/2	1.5000	12	1.4459	1.3978	1.4098	1	7	1.521	1.581

SOURCE: Estimated from American Standard Unified Screw Threads (ASA B1.1-1960) with permission of the publisher, The American Society of Mechanical Engineers, New York.

Ta

120
1/4
5/16
3/8
7/161/2
9/16
5/8
11/163/4
13/16
7/8
15/161
1-1/16
1-1/8
1-3/161-1/4
1-5/16
1-3/8
1-7/161-1/2
1-9/16
1-5/8
1-11/16SOURCE: E.A.
American Steel

Example

SECTION 16-7
Various Types
Other FastenerThe one
nut in ore
hole. Some
application

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APPENDIX B

Fatigue Evaluation

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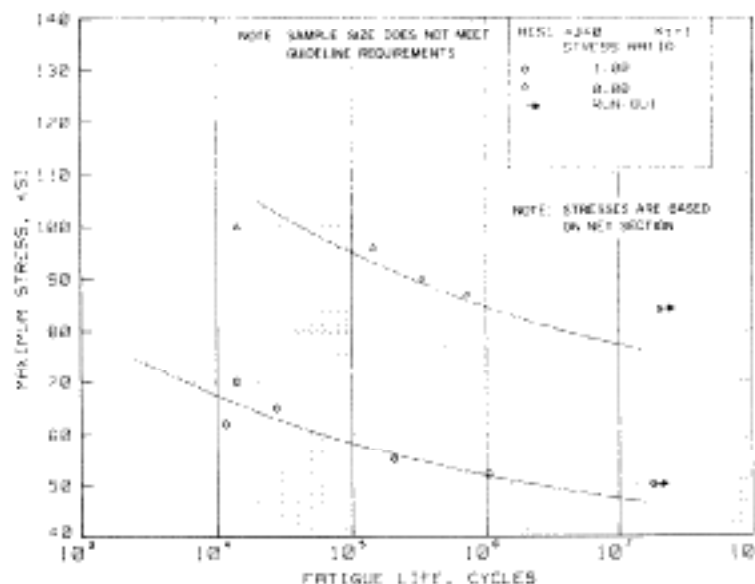
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B.0 FATIGUE

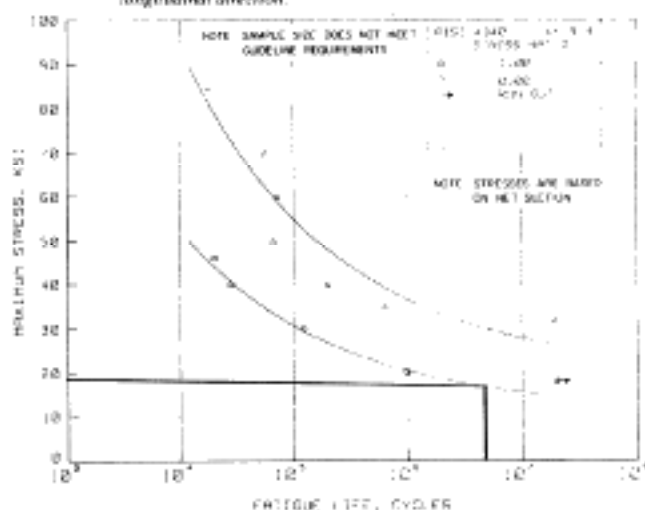


Best-fit S/N curves for unnotched AISI 4340 alloy steel bar, $F_u = 125$ ksi, longitudinal direction.

AISI 4340 IS ASSUMED TO HAVE SIMILAR FATIGUE CHARACTERISTICS AS AISI 4130.

THE MAXIMUM APPLIED LOAD ON THE STUDS IS 17500 PSI. FOR A LOAD OF 17500 PSI THE FATIGUE LIFE CYCLES FOR AN UNNOTCHED BAR ARE ALMOST INFINITE.

(REF MIL-HDBK-SF P. 2-37 FIG. 2.3.1.3.8(a))



Best-fit S/N curves for notched, $K_t = 3.3$, AISI 4340 alloy steel bar, $F_u = 125$ ksi, longitudinal direction.

FOR A LOAD OF 17500 PSI THE FATIGUE LIFE CYCLES FOR A NOTCHED BAR ARE BETWEEN A MILLION AND TEN MILLION CYCLES.

(REF MIL-HDBK-SF P. 2-38 FIG. 2.3.1.3.8(b))

∴ THE FATIGUE LIFE IS CONSIDERED ADEQUATE BECAUSE MAXIMUM LOADING WILL NOT OCCUR VERY OFTEN. CYCLIC LOADING WILL OCCUR BELOW MAXIMUM LOADING MOST OF THE TIME

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APPENDIX C

Applicability to Bell UH-1H

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C.0 APPLICABILITY OF MODIFICATION TO BELL UH-1H

C.1 PART NUMBER COMPARISON

UH-1H is the military designation for the civilian Model 205. A comparison of engine mount part numbers between the two, as called out on Bell Helicopter Corp drawings, shows that the same engine mount is used on the UH-1H and the Model 205A-1:

ENGINE MOUNT ASSEMBLY	BELL DRAWING REFERENCE	PART NO. USED ON BELL 205A-1	PART NO. USED ON BELL UH-1H
TUBE ASSY	205-060-107 REV.J	205-060-107-1	205-060-107-1
BI POD ASSY	206-060-106 REV.H	205-060-106-1	205-060-106-1
TRI POD ASSY	205-060-105 REV.K	205-060-105-1	205-060-105-1

C.2 REVIEW OF OPERATING LIMITATIONS

It is necessary to investigate the existence of any impact or interference the adjustable engine mount modification might have with specific operating limitations listed on each set of UH-1H Type Certificate Data Sheets. Operating limitations, dealing with parameters that affect loading in the existing engine mount, have the potential to be impacted by or interfered with by the adjustable engine mount modification.

The actual loads induced in the engine mount by operating parameters are proprietary to the aircraft designer and are not available. Therefore for the purposes of structural substantiation, as stated in the body of this report, a comparative study was made between the weakest element in the Bell 205A-1 engine mount and the weakest element on the adjustable engine mount. By this method the adjustable engine mount modification is shown to be capable of bearing greater loads than the existing engine mount. Since the three assemblies that make up the engine mount are the same part number on the UH-1H as the Bell 205A-1 (see above table), this part of the analysis holds true for the UH-1H.

The operating parameters that affect engine mount loading are engine h.p., engine r.p.m., rotor r.p.m., airspeed, aircraft weight and C.G. location. Given that the adjustable engine mount can withstand higher loading than the existing engine mount, it would require a significant difference in operating parameter limits, between Bell 205A-1 and UH-1H, to invalidate the structural substantiation. As the following table of operating limits shows, no such difference exists.

TCDS NO. (MODEL)	H1SW (205A-1)	H13WE (UH-1H)	H15NM (UH-1H)	H3SO (UH-1H)	H6SO (UH-1H)	H7SO (UH-1H)	R00007DE (UH-1H)
Engine limits							
Max horsepower:	1250	1100	1100	1100	1100	1100	1100
Output shaft RPM:	6600	6600	6600	6600	6600	6600	6600

(Table continued on next page.)

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C.2 REVIEW OF OPERATING LIMITATIONS (Continued)

TCDS NO. (MODEL)	H1SW (205A-1)	H13WE (UH-1H)	H15NM (UH-1H)	H3SO (UH-1H)	H6SO (UH-1H)	H7SO (UH-1H)	R00007DE (UH-1H)
Rotor limits							
Max power off RPM:	339	339	339	339	339	339	339
Max power on RPM:	324	324	324	324	324	324	324
Airspeed limit – V_{ne} (7500 lbs, nose mounted pitot)	120 kts	119 kts	112 kts	112 kts	120 kts	See note	112 kts
Max weight (lbs)	9500	9500	9500	9500	9500	9500	9500
CG limits							
Fore:	+130	+130	+130	+130	+130	+130	+130
Aft:	+144	+144	+144	+144	+144	+144	+144

NOTE: Pitot position not specified, but 124 kt figure given corresponds to a roof mounted pitot. This in turn corresponds to a 119 kt limit for nose mounted pitot.

C.3 REVIEW OF TYPE CERTIFICATE MANDATED MODIFICATIONS

Conversion of the UH-1H for civilian use involves the removal of mounting points for machine guns, turrets and rocket launchers, where applicable. These components are located on the lower body section of the helicopter or on the landing gear. The existence or the removal of these components therefore has no impact on the adjustable engine mount modification

Certain other modifications may be required to convert an ex-military UH-1H for civilian use or, in some cases, there exist optional modifications that may be embodied. These requirements are defined in each set of Type Certificate Data Sheets. For each instance where the TCDSs refer to a modification or to a report number containing certification requirements, an investigation was carried out to determine the impact on the adjustable engine mount modification or vice versa.

The table below summarizes the results of the investigation. The table lists each Type Certificate reference to a required modification, describes the modification and dispositions it with respect to impact.

TCDS NO.	REFERENCE	DESCRIPTION OF MOD.	IMPACT
H13WE	NOTE 3	Per report GH80, Part One (applicable to UH-1B only)	NONE
	NOTE 12	Addition of placard	NONE
	NOTE 13	Battery relocation	NONE
H15NM	NOTE 8	Addition of placards per Report WI-0100	NONE
H3SO	NOTE 2	Addition of placard	NONE
	NOTE 17	Addition of data plate per Report U98-002-ST	NONE
H6SO	NOTE 2 & 15	Addition of placards per Report SWFA7	NONE
H7SO	NOTE 7	Addition of placards	NONE
	NOTE 9F	Addition of data plate per WHC Report 1102A	NONE
R00007DE	NOTE 4A	Conformity inspection	NONE
	NOTE 14	Applicability	NONE

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C.4 CONCLUSION

This adjustable engine mount modification is therefore applicable to the following UH-1H restricted category helicopters:

TYPE CERTIFICATE DATA SHEET NO.	TYPE CERTIFICATE HOLDER
H13WE	Garlick Helicopters Inc
H15NM	Western International Aviation Inc
H3SO	US Helicopters Inc
H6SO	Southwest Florida Aviation
H7SO	Williams Helicopter Corp
R00007DE	Arrow Falcon Exporters

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APPENDIX D

Applicability to Bell 205B

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D.0 APPLICABILITY OF MODIFICATION TO BELL 205B

D.1 PART NUMBER COMPARISON

The Bell 205B is basically a Bell 205A-1 with a Bell 212 rotor head, a slightly more powerful engine and a Bell 212 type nose extension. All other airframe and power train features are the same as the Bell 205A-1. A limited number of conversions have been carried out in the field with the knowledge and cooperation of the Bell Helicopter Corp. A comparison of 205A-1 & 205B engine mount part numbers by direct reference to Bell Helicopter Corp drawings is therefore not possible, since the 205B is not a factory produced configuration. For confirmation of a common engine mount assembly, reference is made to the following extracts from Bell Helicopter documentation where the 205A-1 & 205B engine mount assembly is treated as one entity.

10/24/2001 15:23 458-433-0272

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Fax / e-mail :	(450)-433-0272 / psemedium@bellhelicopter.textron.com
Date: OCTOBER 24, 2001	

To: JOHN DAVITZ	From: MARK JEFFERYS
Company: VENTURA COUNTY SHERIFF'S DEPT	CC:
Fax #: 805-388-4380	Number of pages: 5
Reference: 2001100659-1	Your Reference:
Subject: 205 Engine Mount modification to Hi-locs	

John,

Please find attached p/n's and details for the 205 engine mounts.

If you require more information please contact me.

Best regards,



Mark Jefferys
Product Support Engineer
PSE Medium
Bell Helicopter Bell User TEXTRON
Commercial Business Unit
Tel : (450) 437-6201
Fax : (450) 433-0272

PREPARED

T Martin

DATE

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D.03

D.1 PART NUMBER COMPARISON (Continued)

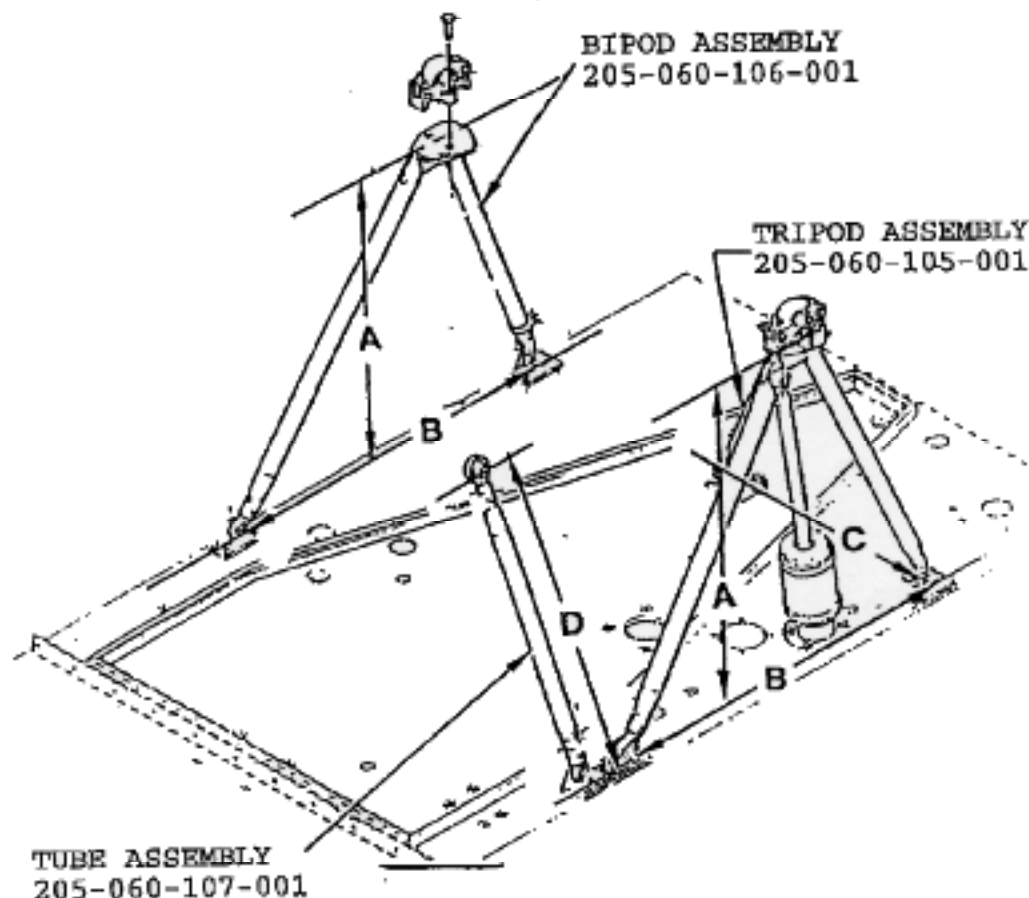
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458-433-8272

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MODEL 205A-1/B ENGINE MOUNT BEARING REPLACEMENT



D.2 REVIEW OF OPERATING LIMITATIONS

It is necessary to investigate the existence of any impact or interference the adjustable engine mount modification might have with specific operating limitations listed for the 205B in TCDS H1SW. Operating limitations, dealing with parameters that affect loading in the existing engine mount, have the potential to be impacted by or interfered with by the adjustable engine mount modification.

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D.2 REVIEW OF OPERATING LIMITATIONS (Continued)

The actual loads induced in the engine mount by operating parameters are proprietary to the aircraft designer and are not available. Therefore for the purposes of structural substantiation, as stated in the body of this report, a comparative study was made between the weakest element in the Bell 205A-1 engine mount and the weakest element on the adjustable engine mount. By this method the adjustable engine mount modification is shown to be capable of bearing greater loads than the existing engine mount. Since the three assemblies that make up the engine mount are the same part number on the 205B as the Bell 205A-1 (see paragraph D.1), this part of the analysis holds true for the 205B.

The operating parameters that affect engine mount loading are engine h.p., engine r.p.m., rotor r.p.m., airspeed, aircraft weight and C.G. location. Given that the adjustable engine mount can withstand higher loading than the existing engine mount, it would require a significant difference in operating parameter limits, between Bell 205A-1 and 205B, to invalidate the structural substantiation. As the following table of operating limits shows, some parameters for the 205B are slightly, but insignificantly, higher than on the 205A-1.

TCDS NO. H1SW	205A-1	205B
Engine limits		
Max horsepower:	1250	1290
Output shaft RPM:	6600	6600
Rotor limits		
Max power off RPM:	339	339
Max power on RPM:	324	324
Airspeed limit – V_{ne} (7500 lbs, nose mounted pitot)	120 kts	130 kts
Max weight (lbs)		
Internal:	9500	10500
External:	10500	11200
CG limits		
Fore:	+130	+130
Aft:	+144	+144

D.3 ENGINE ALIGNMENT PROCEDURE

Introduction of the adjustable engine mount modification on the Bell 204B and Bell 205A-1 necessitated the production of maintenance manual supplements (MMS). These MMS, which are based on existing procedures, describe a new alignment procedure to be followed after modification of the engine mount. The Bell 205B transmission is the same as the 205A-1 and the 205B engine is slightly more powerful version of the 205A-1 engine. Confirmation that the alignment procedure is the same for both models will substantiate that MMS B80772 is valid for both.

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D.3 ENGINE ALIGNMENT PROCEDURE (Continued)

Reference is made to the following communication from Bell Helicopter Corp. for confirmation that the alignment procedure is the same for both models.

11/13/2001 11:22 450-433-0272

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	1-800-363-8028 (U.S.A.)	
Fax / e-mail:	(450)-433-0272 / psemmedium@bellhelicopter.textron.com	
To: JOHN DAVITZ	Date: NOVEMBER 13, 2001	
Company: VENTURA COUNTY SHERIFF'S DEPT	From: MARK JEFFERYS	
Fax #: 805-388-4380	CC:	
Reference: 2001110285-1	Number of pages:	1
Subject: Engine Alignment	Your Reference: Phone Call	

John,

I can confirm that the engine alignment procedure for the 205B is the same as the 205A.


Mark Jefferys
 Product Support Engineer
 PSE Medium
 Bell Helicopter: TEXTRON
 Commercial Business Unit
 Tel : (450) 437-6201
 Fax : (450) 433-0272

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D.4 CONCLUSION

This adjustable engine mount modification is therefore applicable to the Bell model 205B helicopter.